



CHAPTER 1

GENERAL



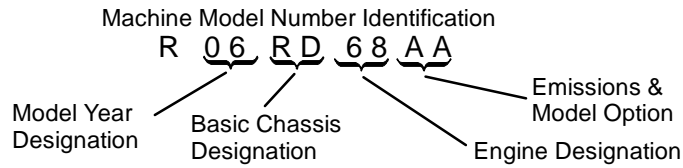
Model Identification	1.2
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MODEL IDENTIFICATION

The machine model number must be used with any correspondence regarding warranty or service.



Engine Designation Number

EH0680LE023 Twin, Liquid cooled, OHV 4 Stroke, Electric Start

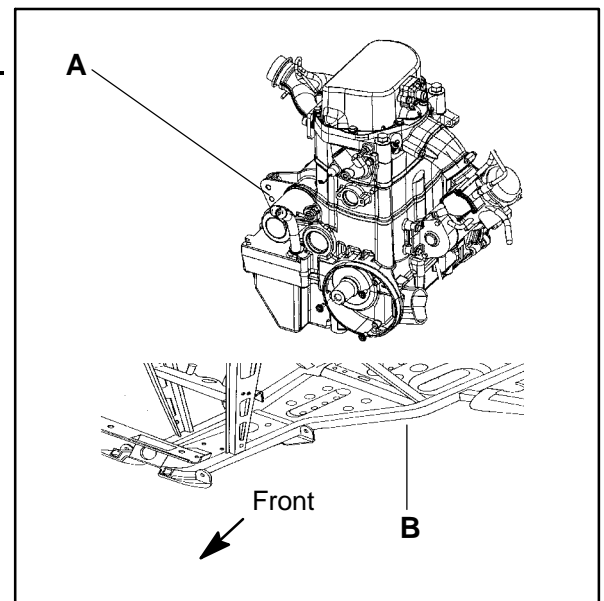
VIN Identification

World Mfg. ID			Vehicle Description							Vehicle Identifier						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
4	X	A	R	D	6	8	A	*	6	P	0	0	0	0	0	0
			Body Style		Powertrain		Engine		Emissions		Check Digit		Model Year		Plant No.	
															Individual Serial No.	

* This could be either a number or a letter

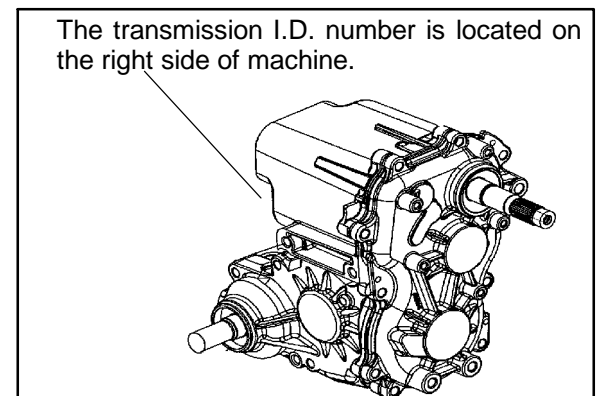
ENGINE SERIAL NUMBER LOCATION

Be sure to refer to the engine model number and serial number whenever corresponding about an engine. This information can be found on the sticker applied to the top side of the crankcase (A). An additional number is stamped on the side of the crankcase beneath the cylinder coolant elbow.



TRANSMISSION I.D. NUMBER LOCATION

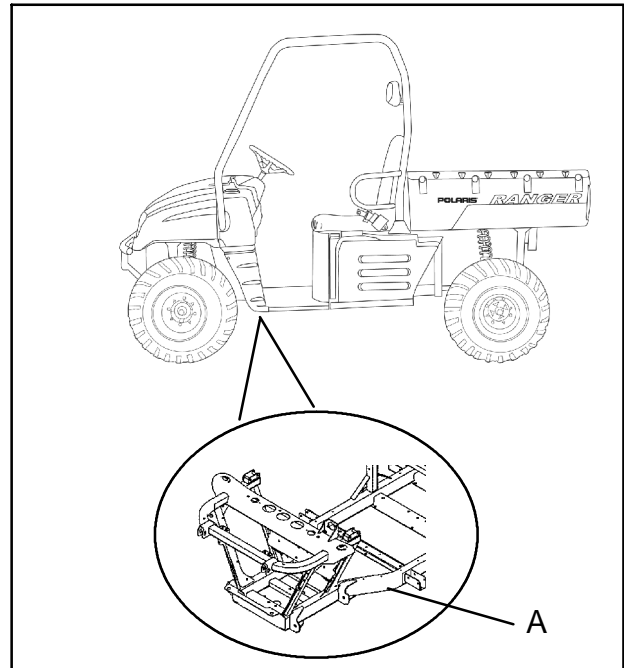
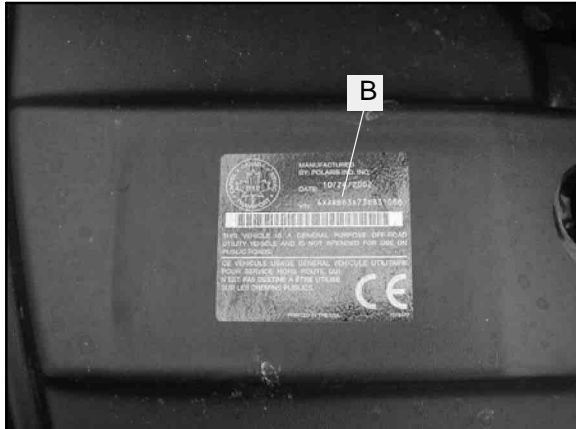
The transmission I.D. number is located on the right side of machine.





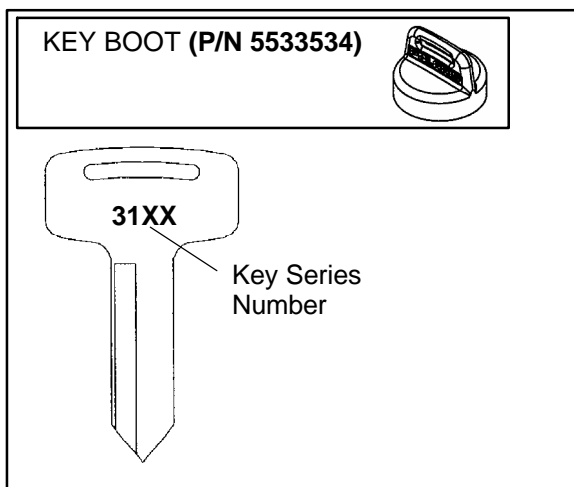
MACHINE MODEL NUMBER AND SERIAL NUMBER LOCATION

The machine model number and serial number are important for vehicle identification. The machine serial number (A) is stamped on the lower frame rail close to the front drive wheel. The model and serial number (B) are also located on a sticker on the hood liner.



REPLACEMENT KEYS

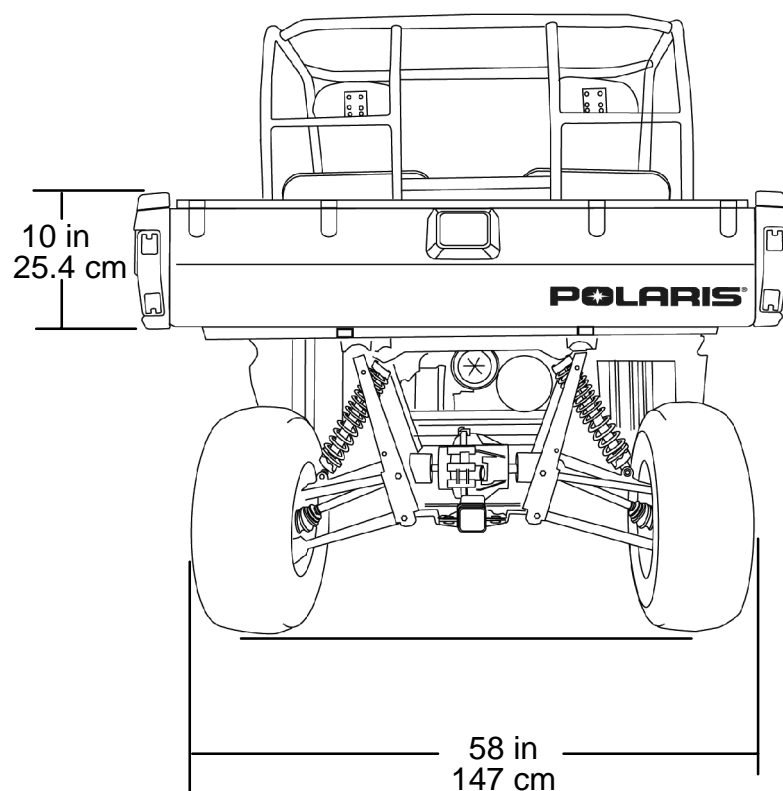
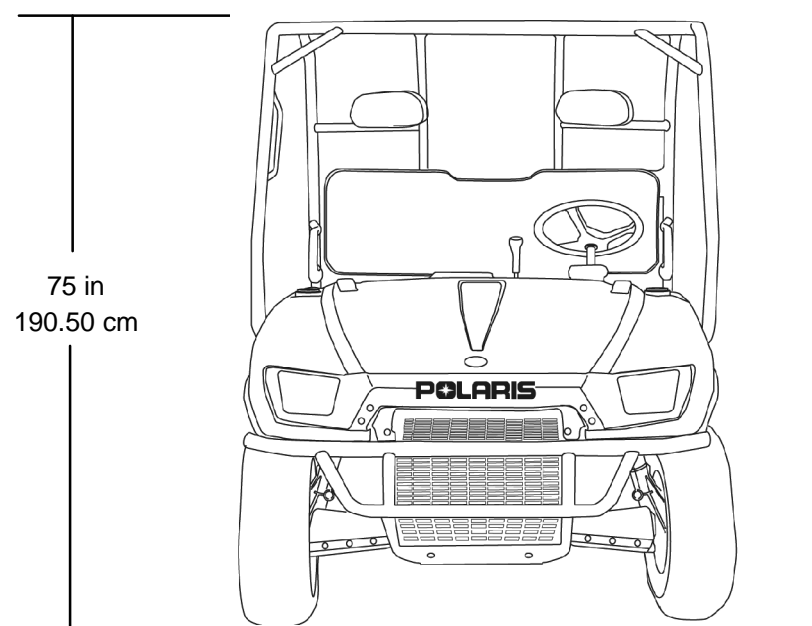
Replacement keys can be made from the original key. To identify which series the key is, take the first two digits on the original key and refer to the chart to the right for the proper part number.



Series #	Part Number
20	4010278
21	4010278
22	4010321
23	4010321
27	4010321
28	4010321
31	4110141
32	4110148
67	4010278
68	4010278

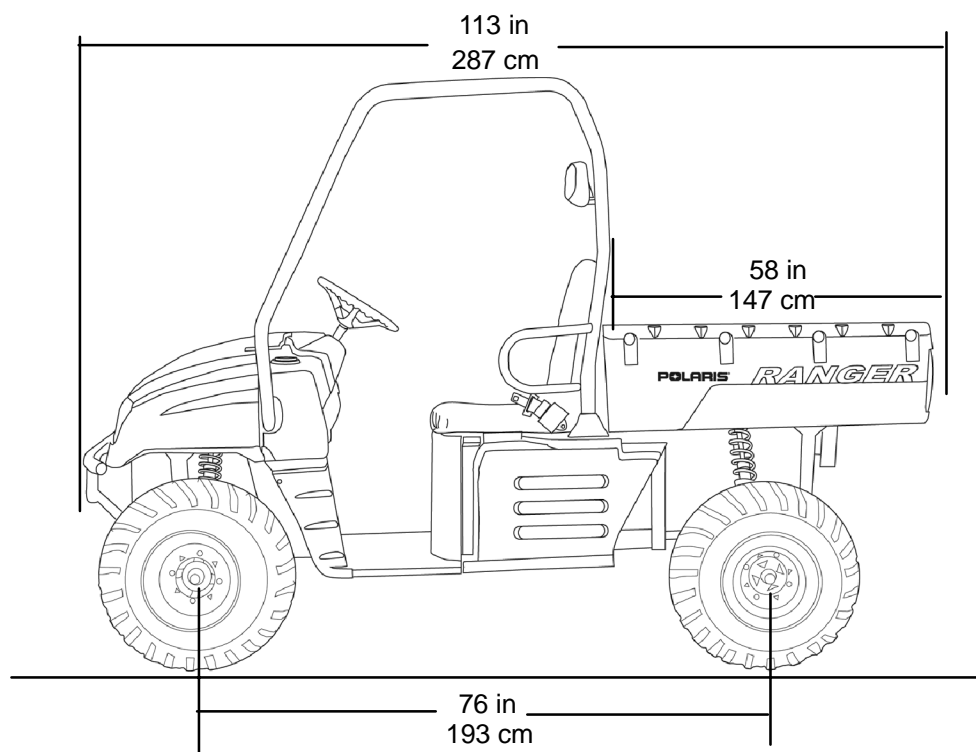
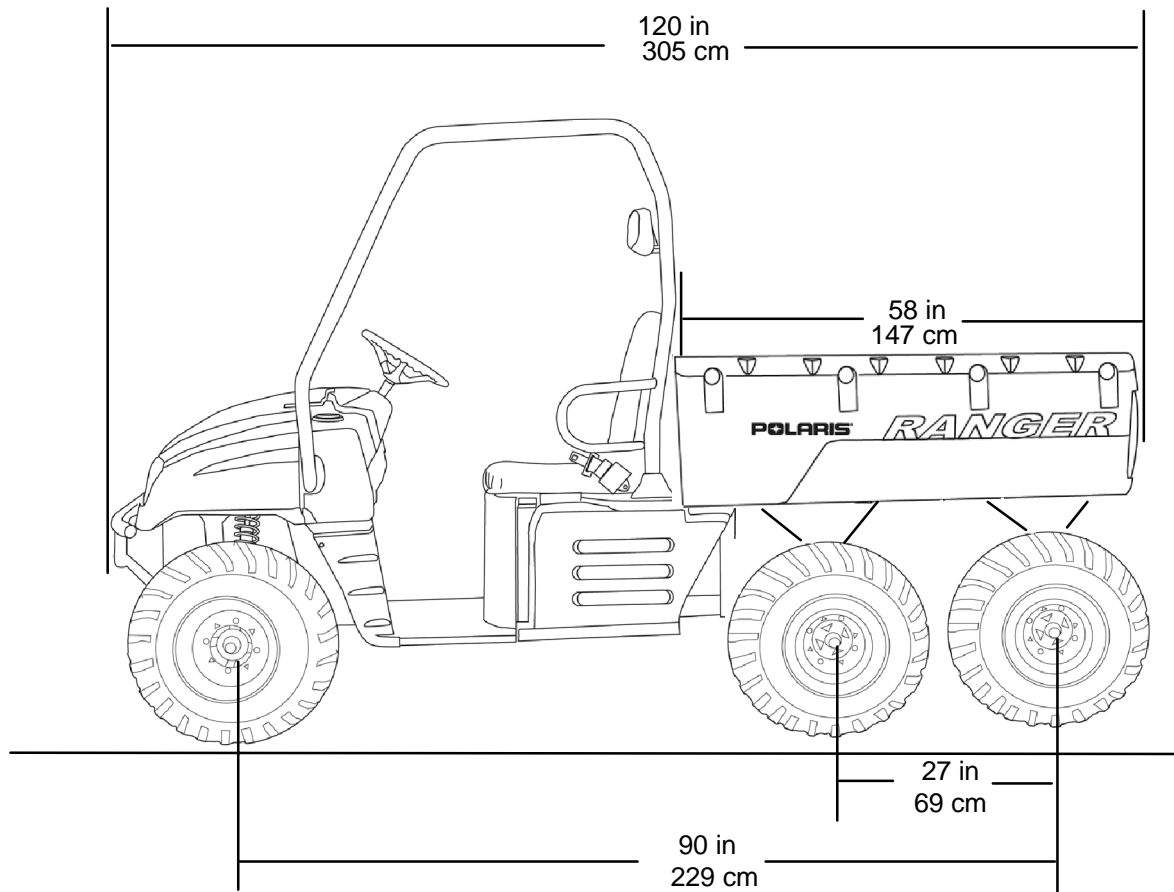


MACHINE DIMENSIONS *RANGER XP/ 6x6 EFI*





MACHINE DIMENSIONS *RANGER XP / 6x6 EFI*



GENERAL INFORMATION



MODEL: 2005 -2006 *RANGER XP 4X4*

MODEL NUMBER: . R05RD68AA, R06RD68AA

ENGINE MODEL: .. EH68PLE

Category	Dimension / Capacity
Length	113 in./287 cm
Width	60 in./152.4 cm
Height	75 in./190.50 cm
Wheel Base	76 in./193 cm
Ground Clearance	Front - 11 in./28 cm Rear - 12 in. /30.5 cm
Dry Weight	1185 lbs./537 kg
Gross Vehicle Weight	2750 Lbs. / 1247 kg
Cargo Box Capacity	1000 lbs./454 kg
Cargo Box Dimensions	58 x 42 x 10 in. / (147 x 106.7 x 25.4 cm)
Vehicle Payload	1500 lbs./681 kg (Includes one driver, pas- senger, box, and cargo)
Hitch Towing Capacity	1750 lbs./794 kg
Hitch Tongue Capacity	150 lbs./68.1 kg



MODEL: 2006 *RANGER 6X6 EFI*

MODEL NUMBER: . R06RF68AA

ENGINE MODEL: .. EH68PLE

Category	Dimension / Capacity
Length	120 in./305 cm
Width	60 in./152.4 cm
Height	75 in./190.50 cm
Wheel Base	90 in./229 cm
Ground Clearance	7.2 in./18.25 cm
Dry Weight	1410 lbs./526 kg
Gross Vehicle Weight	2900 Lbs. / 1315 kg
Cargo Box Capacity	1250 lbs./567 kg
Cargo Box Dimensions	58 x 48 x 10 in. / (147 x 122 x 25.4 cm)
Vehicle Payload	1750 lbs./794 kg (Includes driver,cargo, and passenger)
Hitch Towing Capacity	1750 lbs./794 kg
Hitch Tongue Capacity	150 lbs./68.1 kg





GENERAL INFORMATION

MODEL: 2005-2006 **RANGER 4x4 XP**

MODEL NUMBER: . **R06RD68AA**

ENGINE MODEL: .. **EH0680LE023**

Engine	
Platform	Polaris Twin Cylinder
Engine Model Number	EH0680LE023
Engine Displacement	683cc
Number of Cylinders	2
Bore & Stroke (mm)	80 x 68 mm
Compression Ratio	9.40:1
Compression Pressure	150-170 psi
Engine Idle Speed	1150 ± 100 RPM
Operating RPM	5600 RPM
Engine Max Operating Rpm	6000 Rpm ± 50 Rpm
Cooling System / Capacity	Liquid - 3.25 qt / 3 ltr
Overheat Warning	HOT on Instrument Panel
Lubrication	Pressurized Wet Sump
Oil Requirements / Capacity	Polaris 0W-40 2 qt. / 1.9 ltr
Exhaust System	Single Pipe
Fuel System	
Fuel System	Electronic Fuel Injection (EFI)
Fuel Pump (in tank assembly)	25L per hour at 39 PSI
Fuel Filter(s)	See Chapter 4
Fuel Injector(s)	Bosch
EFI Controller	Bosch MSE 1.1 ECU
Fuel Capacity / Requirement	9.5 gal US / 36 ltr 87 Octane (minimum) 89 Oxygenated
Electrical	
Alternator Output	500 w @ 6000 RPM
Lights : Hood	2-Dual Beam 35 watts / quartz
Tail	5 watts
Brake	5 watts
Indicator Panel	1 watt (ea.)
Ignition System	ECU
Ignition Timing	7° BTDC @ 1200 RPM
Spark plug / Gap	RC7YC/ .035 in. / 0.9 mm
Battery / Model / Amp Hr	Lead Acid / 30 Amp Hr
Circuit Breakers	Fan 20 amp - Harness 20 amp Fuel pump/ECU 15 amp Instrument Cluster / Voltage Regulator 6 amp
Starting	Electric

Drivetrain	
Transmission Type	Dual Sensing Automatic PVT
Transmission Gear Ratio : Front / Rear High Low Rev.	3.89:1 / 3.36:1 10.08:1 / 8.71:1 6.87:1 / 5.94:1
Final Drive Ratio	3.70:1
Front Drive Ratio	3.818:1
Shift Type	In Line EZ Shift Hi/Low/Reverse
Trans. Oil Requirements	Polaris AGL Gearcase Lube
Belt	3211106
Drive Belt Deflection	1.125" / 28.57 mm
Center Distance	10" / 254.5 mm
Clutch Offset	0.365" / 9.27 mm
Springs and Weights	See Below
Steering / Suspension	
Front Suspension	MacPherson Strut
Front Travel	6.7 in. / 170 mm
Rear Suspension	Independent Rear Suspension
Rear Travel	8.63 in. / 22 cm
Ground Clearance	Front - 11 in./28 cm Rear - 12 in. /30.5 cm
Shock Preload Adjustment Front / Rear	Cam Adjustment 2-2" Twin Tubes
Turning Radius	132 in. / 335 cm
Toe Out	1/8-1/4 in. / 3-6.35 mm
Wheels / Brakes	
Wheel Size - Front	26 x 8 - 12 PXT
Wheel Size - Rear	26 x 11 - 12 PXT
F/R Tire Air Pressure	8-12 psi Front / 8-12 psi Rear
Brake - Front	Dual Hydraulic Disc
Brake - Rear	Dual Hydraulic Disc
Parking Brake	Foot Actuated (Mechanical)
Brake Fluid	DOT 3 or DOT 4

CLUTCH CHART

Altitude		Shift Weight	Drive Spring	Second Spring
Meters (Feet)	0-1500 (0-5000)	20 - 60 (5631698)	Blu/Gray (7042202)	Blk/Almond (7043167)
	1500-3700 (5000-12000)	20 - 56 (5631215)	Blu/Gray (7042202)	Blk/Almond (7043167)



GENERAL INFORMATION



MODEL: 2006 RANGER 6x6 EFI
MODEL NUMBER: . R06RF68AA
ENGINE MODEL: .. EH0680LE023

Engine	
Platform	Polaris Twin Cylinder
Engine Model Number	EH0680LE023
Engine Displacement	683cc
Number of Cylinders	2
Bore & Stroke (mm)	80 x 68 mm
Compression Ratio	9.40:1
Compression Pressure	150-170 psi
Engine Idle Speed	1150 ± 100 RPM
Engine Max Operating Rpm	6500 Rpm ± 200 Rpm
Cooling System / Capacity	Liquid - 3.25 qt / 3 ltr
Overheat Warning	HOT on Instrument Panel
Lubrication	Pressurized Wet Sump
Oil Requirements / Capacity	Polaris 0W-40 2 qt. / 1.9 ltr
Exhaust System	Single Pipe
Fuel System	
Fuel System	Electronic Fuel Injection (EFI)
Fuel Pump (in tank assembly)	25L per hour at 39 PSI
Fuel Filter(s)	See Chapter 4
Fuel Injector(s)	Bosch
EFI Controller	Bosch MSE 1.1 ECU
Fuel Capacity / Requirement	9.5 gal US / 36 ltr 87 Octane (minimum) 89 Oxygenated
Electrical	
Alternator Output	500 w @ 6000 RPM
Lights : Hood	2-Dual Beam 35 watts / quartz
Tail	5 watts
Brake	5 watts
Indicator Panel	1 watt (ea.)
Ignition System	ECU
Operating RPM	6000 RPM
Ignition Timing	13° BTDC @ 1200 RPM
Spark plug / Gap	RC7YC/ .035 in. / 0.9 mm
Battery / Model / Amp Hr	Maintenance Free / 30 Amp Hr
Circuit Breakers	Fan 20 amp - Harness 20 amp Fuel pump/ECU 15 amp Instrument Cluster / Voltage Regulator 6 amp
Starting	Electric

Drivetrain	
Transmission Type	Dual Sensing Automatic PVT
Gear Ratio :	High Low Rev.
	3.83:1 8.71:1 5.94:1
Final Drive Ratio	3.70:1
Front Drive Ratio	3.83:1
Mid Drive Ratio	3.70:1
Shift Type	In Line EZ Shift Hi/Low/Reverse
Trans. Oil Requirements	Polaris AGL Gearcase Lube
Belt	3211106
Drive Belt Deflection	1.125" / 28.57 mm
Center Distance	10" / 254.5 mm
Clutch Offset	0.5" / 12.7 mm
Springs and Weights	See Below
Steering / Suspension	
Front Suspension	MacPherson Strut
Front Travel	6.25 in. / 15.9 cm
Center Suspension	Independent
Center Travel	5.25 in. / 13.3 cm
Rear Suspension	Swing Arm w/ Dual Shocks
Rear Travel	6.25 in. / 15.9 cm
Ground Clearance	7.2 in. / 180 mm
Shock Preload Adjustment Front / Rear	Cam Adjustment 2-2" Twin Tubes
Turning Radius	186 in. (472.4 cm)
Toe Out	1/8-1/4 in. / 3-6.35 mm
Wheels / Brakes	
Wheel Size - Front	25x10 - 12
Wheel Size - Rear	25x11 - 12
Recommended Air Pressure F / R	8-12 psi Front 8-12 psi Rear
Brake - Front	Dual Hydraulic Disc
Brake - Rear	Dual Hydraulic Disc
Parking Brake	Foot Actuated (Mechanical)
Brake Fluid	DOT 3 or DOT 4

CLUTCH CHART

Altitude		Shift Weight	Drive Spring	Second Spring
Meters (Feet)	0-1500 (0-5000)	20 - 60 (5631698)	Blu/Gray (7042202)	Blk/Almond (7043167)
	1500-3700 (5000-12000)	20 - 56 (5631215)	Blu/Gray (7042202)	Blk/Almond (7043167)



**PUBLICATION NUMBERS**

Model	Model No.	Owner's Manual PN	Service Manual PN	Parts Manual PN	Parts Micro Fiche PN
2005 RANGER XP 4x4 EFI	R05RD68AA	9919825	9919829	9919826	9919827
2006 RANGER 6x6 EFI	R06RF68AA	9920220	9920224	9920225	9920226
2006 RANGER XP 4x4 EFI	R06RD68AA	9920220	9920224	9920221	9920222

NOTE: When ordering service parts be sure to use the correct parts manual.

NOTE: Some Polaris factory publications can be found at www.polarisindustries.com or purchased from www.purepolaris.com.

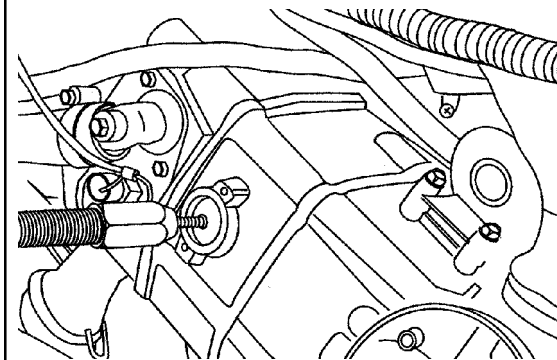
PAINT CODES

PAINTED PART	COLOR DESCRIPTION	POLARIS NUMBER
RANGER XP Main Frame	Medium Gloss Black	P-067
RANGER XP Cab Frame & Front Bumper	Flat Black Wrinkle	P-418
RANGER XP Plastic	Delta Green	P-492
RANGER 6x6 EFI Main Frame	Medium Gloss Black	P-067
RANGER 6x6 EFI Cab Frame & Front Bumper	Flat Black Wrinkle	P-418
RANGER 6x6 EFI Plastic	Eddie Bauer Green	P-195

Order direct from Midwest Industrial Coatings (952-942-1840). Mix as directed.

ACCESSORY ENGINE HEATER**Frost Plug Heater (PN 2873069)
For Domestic Twin Cylinder Engines**

A frost plug heater is available for Polaris domestic twin cylinder engines. Contact your local Polaris dealer to order this kit.





PRE-RIDE / DAILY INSPECTION

Perform the following pre-ride inspection daily, and when servicing the vehicle at each scheduled maintenance.

- S Tires - check condition and pressures
- S Fuel and oil tanks - fill both tanks to their proper level; Do not overfill oil tank
- S All brakes - check operation and adjustment (includes auxiliary brake)
- S Throttle - check for free operation and closing
- S Headlight/Taillight/Brakelight - check operation of all indicator lights and switches
- S Wheels - check for tightness of wheel nuts and axle nuts; check to be sure axle nuts are secured by cotter pins
- S Air cleaner element - check for dirt; clean or replace
- S Steering - check for free operation noting any unusual looseness in any area
- S Loose parts - visually inspect vehicle for any damaged or loose nuts, bolts or fasteners
- S Engine coolant - check for proper level at the recovery bottle

STARTING THE *RANGER*

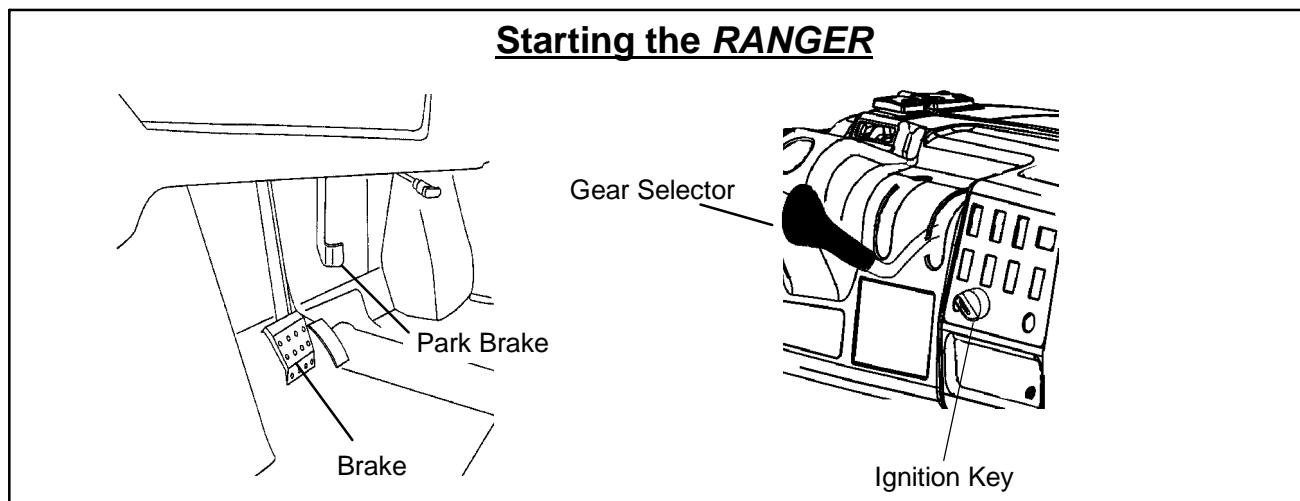
NOTICE: Refer to your owners manual for machine operating procedures and safety pre-cautions.

1. While seated in the drivers seat, with seat belt fastened. Engage the park brake.
2. Press down on the brake pedal and turn the ignition key to START.

NOTE: If the engine does not start within five seconds,

release the ignition switch and wait five seconds. Repeat the starting process.

3. Once the engine is started, let the engine warm up for a few moments. Vary the throttle to aid in engine warm up.





RANGER ACCESSORIES



RANGER ACCESSORIES

A variety of accessories are available for your *RANGER*. Contact your dealer for pricing and availability.

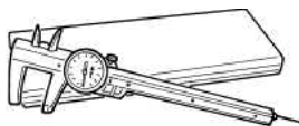




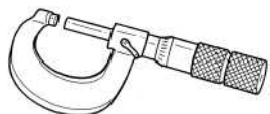
SPECIAL TOOLS

Special Tools maybe required while servicing your machine. Some of the tools listed are mandatory and other tools maybe substituted with a similar tool, if available. Polaris recommends the use of Polaris special tools when servicing any Polaris product.

Standard Tools and Engine Tools



PU-45432 - Caliper or
A Basic Caliper



Basic Micrometer



2871043 - Flywheel Puller



2870773 - C-Clip Install Tool

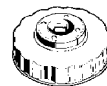


2870386 - Piston Pin Puller



2871445 - Piston Pin Puller Adapter

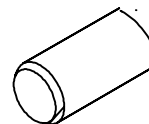
Standard Tools and Engine Tools



PV-43527 Oil Filter Wrench



2870390 - Piston Support Block



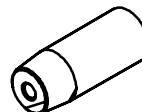
PA-44995 - Water Pump Mechanical
Seal Install Tool



PU-45543 - Universal Driver Handle



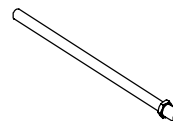
PA-45483 - Main Seal Installer



PA-45658 - Main Crank Seal Saver



PA-45401 - Water Pump Seal Saver

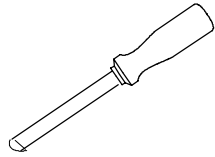


PU-45778 - Oil Pump Priming Tool

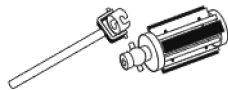




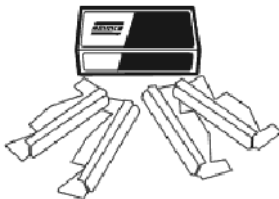
Standard Tools and Engine Tools



PU-47315 - Throttle Body Adjustment Screwdriver



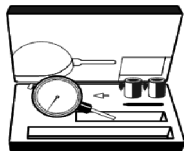
2870303 - Hone Kit



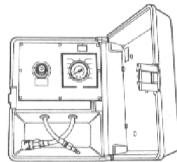
2870305 - Stone Replacement Kit



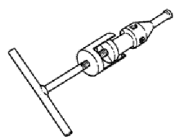
2870588 - Hone Oil (12 oz.)



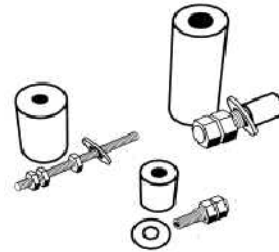
2870459 - Dial Indicator



PV-35667-A - Cylinder Leak down Tester

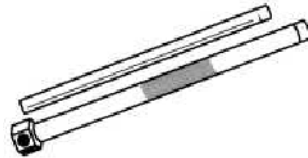


2872105 - Water Pump Seal Puller

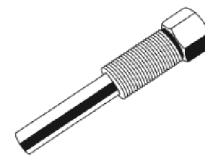


2871283 - Crank/Water Pump Seal Install Kit

Clutch (PVT) Tools



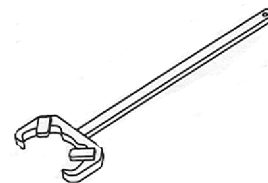
2870506 - Drive Clutch Puller



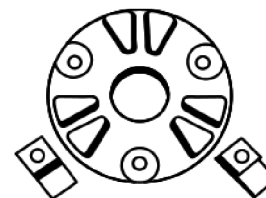
2870913 - Driven Clutch Puller



PA-47346 - Clutch Align Tool



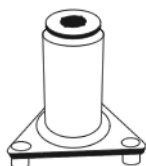
9914177-A- Drive Clutch Holding Tool



2871358 - Clutch Holding Fixture



Clutch (PVT) Tools



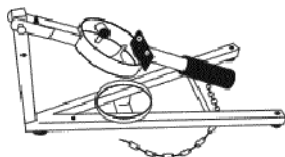
2870341 - Drive Clutch Spider Removal Tool



2870910 - Roll Pin Tool



2871226 - Clutch Bushing Replacement Kit



8700220 - Clutch Compression Tool



2870338 - Spider Nut Socket

Suspension & Transmission Tools



2870872 - Shock Spanner Wrench

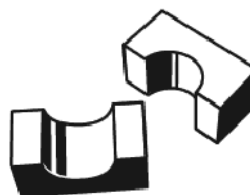


2872608 - Roll Pin Removal Tool

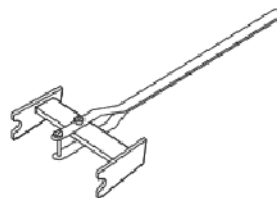
Suspension Tools



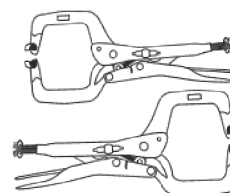
2870871 - ATV Ball Joint Tool Kit



2871071 - Shock Body Holding Tool



2870623 - Shock Spring Compressor



2871573 & 2871574 - Strut Spring Compressor



8700225 & 8700226 - CV Boot Clamp Pliers

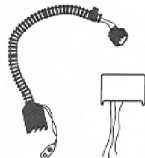




Electrical Tools



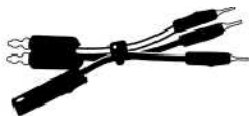
PU-47063 -Digital Wrench t Software
(PU-47151 - Interface Cable)



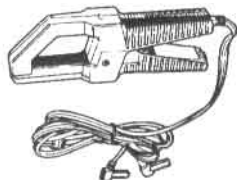
2201519 - TPS Tester Kit



PV-43568 -Fluke t 77 Multimeter



2460761 - Hall Sensor Probe Harness



PV-39617 - Current Clamp



2870836 - Battery Hydrometer



8712500 -
Tachometer

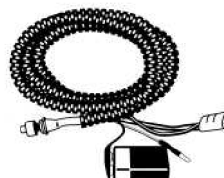


PV-39951-A -
Tachometer

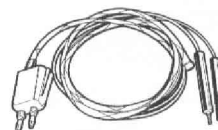
Electrical Tools



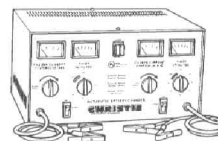
2870630 - Timing Light



2871745 -Static Timing Light Harness



PV-39991 - Peak Reading Adapter



PV-37453 - Christie Se-Sulfating
Multi-Battery Charger



PV-63070 - Christie Multi-Battery
Charger

Fuel & Brake Systems

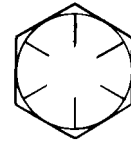
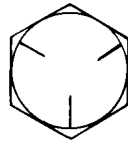
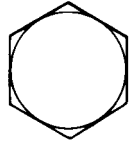


2870975 - Mity Vact



STANDARD TORQUE SPECIFICATIONS

The following torque specifications are to be used as a general guideline. There are exceptions in the steering, suspension, and engine areas. Always consult the exploded views in each manual section for torque values of fasteners before using standard torque.



Bolt Size	Threads/In	Grade 2	Grade 5	Grade 8
<u>Torque in. lbs. (Nm)</u>				
#10 -	24	27 (3.1)	43 (5.0)	60 (6.9)
#10 -	32	31 (3.6)	49 (5.6)	68 (7.8)
<u>Torque ft. lbs. (Nm)*</u>				
1/4 -	20	5 (7)	8 (11)	12 (16)
1/4 -	28	6 (8)	10 (14)	14 (19)
5/16 -	18	11 (15)	17 (23)	25 (35)
5/16 -	24	12 (16)	19 (26)	29 (40)
3/8 -	16	20 (27)	30 (40)	45 (62)
3/8 -	24	23 (32)	35 (48)	50 (69)
7/16 -	14	30 (40)	50 (69)	70 (97)
7/16 -	20	35 (48)	55 (76)	80 (110)
1/2 -	13	50 (69)	75 (104)	110 (152)
1/2 -	20	55 (76)	90 (124)	120 (166)

Metric

6 x 1.0	72-78 In. lbs.
8 x 1.25	14-18 ft. lbs.
10 x 1.25	26-30 ft. lbs.

*To convert ft. lbs. to Nm multiply foot pounds by .1.382

*To convert Nm to ft. lbs. multiply Nm by .7376.

SPECIFIC TORQUE VALUES OF FASTENERS

Refer to exploded views in the appropriate sectionTorque Conversions



**SAE TAP DRILL SIZES**

Thread Size/Drill Size		Thread Size/Drill Size	
#0-80	3/64	1/2-13	27/64
#1-64	53	1/2-20	29/64
#1-72	53	9/16-12	31/64
#2-56	51	9/16-18	33/64
#2-64	50	5/8-11	17/32
#3-48	5/64	5/8-18	37/64
#3-56	45	3/4-10	21/32
#4-40	43	3/4-16	11/16
#4-48	42	7/8-9	49/64
#5-40	38	7/8-14	13/16
#5-44	37	1-8	7/8
#6-32	36	1-12	59/64
#6-40	33	1 1/8-7	63/64
#8-32	29	1 1/8-12	1 3/64
#8-36	29	1 1/4-7	1 7/64
#10-24	24	1 1/4-12	1 11/64
#10-32	21	1 1/2-6	1 11/32
#12-24	17	1 1/2-12	1 27/64
#12-28	4.6mm	1 3/4-5	1 9/16
1/4-20	7	1 3/4-12	1 43/64
1/4-28	3	2-4 1/2	1 25/32
5/16-18	F	2-12	1 59/64
5/16-24	I	2 1/4-4 1/2	2 1/32
3/8-16	O	2 1/2-4	2 1/4
3/8-24	Q	2 3/4-4	2 1/2
7/16-14	U	3-4	2 3/4
7/16-20	25/64		

METRIC TAP DRILL SIZES

Tap Size	Drill Size	Decimal Equivalent	Nearest Fraction
3 x .50	#39	0.0995	3/32
3 x .60	3/32	0.0937	3/32
4 x .70	#30	0.1285	1/8
4 x .75	1/8	0.125	1/8
5 x .80	#19	0.166	11/64
5 x .90	#20	0.161	5/32
6 x 1.00	#9	0.196	13/64
7 x 1.00	16/64	0.234	15/64
8 x 1.00	J	0.277	9/32
8 x 1.25	17/64	0.265	17/64
9 x 1.00	5/16	0.3125	5/16
9 x 1.25	5/16	0.3125	5/16
10 x 1.25	11/32	0.3437	11/32
10 x 1.50	R	0.339	11/32
11 x 1.50	3/8	0.375	3/8
12 x 1.50	13/32	0.406	13/32
12 x 1.75	13/32	0.406	13/32

DECIMAL EQUIVALENTS

1/64	.0156	
1/32	.0312	1 mm = .0394"
3/64	.0469	
1/16	.0625	
5/64	.0781	2 mm = .0787"
3/32	.0938	
7/64	.1094	3 mm = .1181"
1/8	.1250	
9/64	.1406	
5/32	.1563	4 mm = .1575"
11/64	.1719	
3/16	.1875	5 mm = .1969"
13/64	.2031	
7/32	.2188	
15/64	.2344	6 mm = .2362"
1/4	.25	
17/64	.2656	7 mm = .2756"
9/32	.2813	
19/64	.2969	
5/16	.3125	8 mm = .3150"
21/64	.3281	
11/32	.3438	9 mm = .3543"
23/64	.3594	
3/8	.375	
25/64	.3906	10 mm = .3937"
13/32	.4063	
27/64	.4219	11 mm = .4331"
7/16	.4375	
29/64	.4531	
15/32	.4688	12 mm = .4724"
31/64	.4844	
1/2	.5	13 mm = .5118
33/64	.5156	
17/32	.5313	
35/64	.5469	14 mm = .5512"
9/16	.5625	
37/64	.5781	15 mm = .5906"
19/32	.5938	
39/64	.6094	
5/8	.625	16 mm = .6299"
41/64	.6406	
21/32	.6563	17 mm = .6693"
43/64	.6719	
11/16	.6875	
45/64	.7031	18 mm = .7087"
23/32	.7188	
47/64	.7344	19 mm = .7480"
3/4	.75	
49/64	.7656	
25/32	.7813	20 mm = .7874"
51/64	.7969	
13/16	.8125	21 mm = .8268"
53/64	.8281	
27/32	.8438	
55/64	.8594	22 mm = .8661"
7/8	.875	
57/64	.8906	23 mm = .9055"
29/32	.9063	
59/64	.9219	
15/16	.9375	24 mm = .9449"
61/64	.9531	
31/32	.9688	25 mm = .9843
63/64	.9844	
1	1.0	





GLOSSARY OF TERMS

ABDC: After bottom dead center.

ACV: Alternating current voltage.

Alternator: Electrical generator producing voltage alternating current.

ATDC: After top dead center.

BBDC: Before bottom dead center.

BDC: Bottom dead center.

BTDC: Before top dead center.

CC: Cubic centimeters.

Center Distance: Distance between center of crankshaft and center of driven clutch shaft.

Chain Pitch: Distance between chain link pins (No. 35 = 3/8" or 1 cm). Polaris measures chain length in number of pitches.

CI: Cubic inches.

Clutch Buttons: Plastic bushings which aid rotation of the movable sheave in the drive and driven clutch.

Clutch Offset: Drive and driven clutches are offset so that drive belt will stay nearly straight as it moves along the clutch face.

Clutch Weights: Three levers in the drive clutch which relative to their weight, profile and engine RPM cause the drive clutch to close and grip the drive belt.

Crankshaft Run-Out: Run-out or "bend" of crankshaft measured with a dial indicator while crankshaft is supported between centers on V blocks or resting in crankcase. Measure at various points especially at PTO.

DCV: Direct current voltage.

Dial Bore Gauge: A cylinder measuring instrument which uses a dial indicator. Good for showing taper and out-of-round in the cylinder bore.

Electrical Open: Open circuit. An electrical circuit which isn't complete.

Electrical Short: Short circuit. An electrical circuit which is completed before the current reaches the intended load. (i.e. a bare wire touching the chassis).

End Seals: Rubber seals at each end of the crankshaft.

Engagement RPM: Engine RPM at which the drive clutch engages to make contact with the drive belt.

ft.: Foot/feet.

Foot Pound: Ft. lb. A force of one pound at the end of a lever one foot in length, applied in a rotational direction.

g: Gram. Unit of weight in the metric system.

gal.: Gallon.

ID: Inside diameter.

in.: Inch/inches.

Inch Pound: In. lb. 12 in. lbs. = 1 ft. lb.

kg/cm²: Kilograms per square centimeter.

kg-m: Kilogram meters.

Kilogram/meter: A force of one kilogram at the end of a lever one meter in length, applied in a rotational direction.

l or ltr: Liter.

lbs/in²: Pounds per square inch.

Left or Right Side: Always referred to based on normal operating position of the driver.

m: Meter/meters.

Mag: Magneto.

Magnetic Induction: As a conductor (coil) is moved through a magnetic field, a voltage will be generated in the windings. Mechanical energy is converted to electrical energy in the stator.

mi.: Mile/miles.

mm: Millimeter. Unit of length in the metric system. 1mm = approximately .040".

Nm: Newton meters.

OD: Outside diameter.

Ohm: The unit of electrical resistance opposing current flow.

oz.: Ounce/ounces.

Piston Clearance: Total distance between piston and cylinder wall.

psi.: Pounds per square inch.

PTO: Power take off.

PVT: Polaris Variable Transmission (Drive Clutch System)

qt.: Quart/quarts.

Regulator: Voltage regulator. Regulates battery charging system output at approx. 14.5 DCV as engine RPM increases.

Reservoir Tank: The fill tank in the liquid cooling system.

Resistance: In the mechanical sense, friction or load. In the electrical sense, ohms, resulting in energy conversion to heat.

RPM: Revolutions per minute.

Seized Piston: Galling of the sides of a piston. Usually there is a transfer of aluminum from the piston onto the cylinder wall. Possible causes: 1) improper lubrication; 2) excessive temperatures; 3) insufficient piston clearance; 4) stuck piston rings.

Stator Plate: The plate mounted under the flywheel supporting the battery charging coils.

TDC: Top dead center. Piston's most outward travel from crankshaft.

Volt: The unit of measure for electrical pressure of electromotive force. Measured by a voltmeter in parallel with the circuit.

Watt: Unit of electrical power. Watts = amperes x volts.

WOT: Wide open throttle.